IN THE CLAIMS

1. (original) A method of assaying for vascular dysfunction in a subject affected by or at risk for a neurodegenerative disorder or another cognitive impairment, said method comprising determining whether there is inappropriate senescence and/or defective angiogenesis in at least endothelium of the subject or cells derived from endothelium of the subject.

2. (original) The method according to Claim 1, wherein said subject is affected by or at risk for Alzheimer's disease.

3. (original) The method according to Claim 1, wherein said subject is human.

4. (currently amended) The method according to ~~any one of Claims 1-3~~ Claim 1 which further comprises obtaining endothelial cells from said subject and culturing said cells to provide derived cells, wherein inappropriate senescence and/or defective angiogenesis in at least said derived cells is indicative of vascular dysfunction.

5. (currently amended) The method according to ~~any one of Claims 1-4~~ Claim 1, wherein there is at least (a) abnormal response by endothelial cells to angiogenic signaling; (b) anoikis, apoptosis, or programmed cell death; (c) mitotic catastrophe; (d) a storage disorder, or (e) a combination thereof.

6. (currently amended) The method according to ~~any one of Claims 1-4~~ Claim 1, wherein there is at least (a) defective differentiation of endothelial cells, (b) defective fusion of capillaries or vessels, (c) inappropriate regression of capillaries or vessels, or (d) a combination thereof.

7. (original) A method of treating a neurodegenerative disorder or another cognitive impairment, said method comprising administration of a drug or other treatment which at least (a) causes neovascularization, (b) reduces defective angiogenesis, (c) reduces defective capillary morphogenesis, (d) reduces senescence, (e) reduces mitotic catastrophe, or (f) a combination thereof in brain and/or vascular system of a subject to provide therapy and/or prevention.

8. (original) A method of treating a neurodegenerative disorder or another cognitive impairment, said method comprising administration of a drug or other treatment which at least (a) reduces vascular dysfunction or (b) normalizes expression of one or more genes whose regulation is dysregulated in brain and/or vascular system of a subject to provide therapy and/or prevention.

9. (currently amended) The method according to Claim 7 [[or 8]], wherein said neurodegenerative disorder or another cognitive impairment is Alzheimer's disease.

10. (currently amended) The method according to Claim 7 [[or 8]], wherein said subject is human.

11. (currently amended) The method according to ~~any one of Claims 7-10~~ Claim 7 further comprising assessing improved cognitive function of said subject after treatment.

12. (currently amended) The method according to ~~any one of Claims 7-11~~ Claim 7 further comprising monitoring treatment by assessing cerebral blood flow or blood-brain barrier function.

13. (currently amended) A method of determining effectiveness of a drug or other treatment of a neurodegenerative disorder or another cognitive impairment, said method comprising:

(a) applying the drug or other treatment to a subject or an endothelial cell culture;
(b) assaying for vascular dysfunction which is not caused by amyloid; and
(c) selecting said drug or other treatment if there is reversal of vascular dysfunction as potentially effective for said neurodegenerative disorder or another cognitive impairment.

14. (original) The method according to Claim 13, wherein at least angiogenesis or senescence is assayed as indicative of said vascular dysfunction.

15. (currently amended) The method according to Claim 13 [[or 14]], wherein said subject is a nonhuman animal model.

16. (original) The method according to Claim 15, wherein said nonhuman animal model is transgenic for a disease-specific gene.

17. (original) The method according to Claim 15, wherein said nonhuman animal model has a knock-in or knock-out mutation for a disease-specific gene.

18. (currently amended) A drug or other treatment selected by the method according to ~~any one of Claims 13-17~~ Claim 13.

19. (original) A method of determining whether cells manifest a phenotype indicative of a neurodegenerative disorder or another cognitive impairment comprising assessing at least (a) angiogenesis, (b) capillary morphogenesis, (c) differentiation of or signal transduction in endothelial cells, (d) DNA damage or repair, (e) mitotic catastrophe, (f) senescence, (g) lysosome function, or (h) a combination thereof.

20. (original) The method according to Claim 19, wherein said neurodegenerative disorder or another cognitive impairment is Alzheimer's disease.

21. (original) The method according to Claim 19, wherein said cells are derived from a human.

22. (original) The method according to Claim 19, wherein said cells are derived from a nonhuman animal.

23. (currently amended) The method according to ~~any one of Claims 19-22~~ Claim 19 which further comprises selecting a drug or other treatment as potentially effective for therapy and/or prevention by said drug's or other treatment's ability to reverse said phenotype indicative of a neurodegenerative disorder or another cognitive impairment.

24. (original) A drug or other treatment selected by the method according to Claim 23.

25. (original) A method of producing stress-induced premature senescent (SIPS) endothelial cells to provide an *in vitro* model for a neurodegenerative disorder or another cognitive impairment, said method comprising:

(a) providing a culture of endothelial cells,

(b) treating said culture with hydrogen peroxide to induce senescence, and

(c) isolating SIPS endothelial cells from said treated culture.

26. (original) SIPS endothelial cells produced by the method according to Claim 25.